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ABSTRACT

How useful is Stufflebeam's Context, Input, Process, Product (CIPP) model for evaluating an established career program in a community college? On the basis of a case study, advantages of using CIPP include: comprehensiveness, flexibility, integration and decision-orientation. Implementation problems include: establishing procedures for delineating data to be collected; establishing criteria for classifying data elements into Context, Input, Process and Product categories; and establishing procedures for maximizing impact of study results on institutional decision-making. Although designed to sequentially evaluate new change projects and most widely applied in large school systems, the CIPP model is very useful for evaluating an established program in a community college. (Author)

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RESEARCH BRIEF

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Study: Utility of the CIPP Model for Evaluating an Established Career Program in a Community College

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A strong incentive for systematic and comprehensive program evaluation in community colleges is provided by declining rates of enrollment growth, declining levels of external funding, increasing concern about accountability and increasing competition for allocation of local resources. Although Moraine Valley Community College had well developed procedures for student follow-up, faculty evaluation, unit-cost analysis, etc., these elements were incomplete and lacked integration into a systematic program evaluation system.

A review of the literature on educational evaluation revealed many contemporary evaluation models which an institution could adopt or adapt. For example, Fortune and Hutchinson have developed a decision-oriented evaluation model (Benedict, 1973). In addition, Worthen and Sanders (1973) compared significant characteristics of the evaluation models developed by Alkin, Hammond, Metfessel and Michael, Provus, Regional Accreditation, Scriven, Stake, Stufflebeam and Tyler. A review of evaluation studies (e.g., Jacobs, 1970; Zepeda, 1975) indicated extensive use of Stufflebeam's CIPP model to evaluate developmental projects in large school systems. The CIPP model was chosen for application to the Medical Laboratory Technician (MLT) Program at Moraine Valley on the basis of its purpose, emphasis on decision-making, the role of the evaluator (Worthen and Sanders, 1973, pp 212-215), its popularity and because it may be relevant for accountability (Stufflebeam, 1971).

The purpose of this paper is to evaluate the utility of the CIPP model for evaluating an established career program. Using the MLT Program as a case study, advantages of using this model and problems involved in implementing it are presented.

Advantage of Using the CIPP Model

Advantages of using the CIPP model include: comprehensiveness, flexibility, integration and decision-orientation.

Comprehensiveness. The CIPP model includes four types of evaluation: context, input, process and product. Context evaluation defines the environment in

which the program operates, identifies needs and opportunities and diagnoses problems underlying these needs and opportunities. Input evaluation assesses the capabilities of the system, strategies for achieving program goals and designs for implementing selected strategies. Process evaluation identifies defects in design or implementation, provides information for pre-programmed decisions and records procedures and activities. Product evaluation measures and interprets outcomes in terms of objectives, context, input and process (Stufflebeam and others, 1971, pp 218-232). Application of this comprehensive model led to the evaluation of 23 different aspects of the MLT Program (Figure 1).

Flexibility. According to Stufflebeam and others, "Since decision-making requirements are subject to change, evaluation designs should be flexible and capable of meeting changing requirements" (1971, p 218). In evaluating the MLT Program, administrative concerns focused on the processes employed to implement the program. Consequently, process evaluation was more extensive than context, input and product evaluation for this program. Although a thorough evaluation of the MLT Program was requested by the Dean of Instruction, he has requested that the design be simplified for subsequent evaluation of other career programs.

Integration. Application of the CIPP model integrated both data and staff efforts. For the first time, all evaluation data on an individual program have been brought together in a single document. In addition, our Research and Evaluation Office functioned as a team with each staff member working on one or more aspects of the total evaluation. A mutually developed calendar of activities involved the Associate Dean for Occupational Education, the Associate Dean for Health Sciences, the MLT Program Coordinator, the MLT faculty and a number of instructional support services staff.

Decision-Orientation. Each component of the CIPP model provides information for making different types of decisions. Context evaluation provides a rationale for determining program goals and objectives. Input evaluation provides information for structuring decisions for program design. Process evaluation provides data for implementing decisions which control program operation. Product evaluation serves recycling decisions to continue, terminate, refocus or change appropriate program elements (Worthen and Sanders, 1973, p 139).

Each CIPP component provided information for decisions regarding our MLT program. Context evaluation identified a need to increase the specificity of program and course objectives. Input evaluation provided data which indicated that some MLT laboratory equipment required updating to make it more compatible with current practice in the field. Process evaluation identified a need to increase the quantity of laboratory materials available for skill development.

A review of several aspects of process evaluation led to replacement of the MLT program coordinator. In addition, process evaluation generated several recommendations for increasing the effectiveness of several instructional support services. Product evaluation contributed to a decision to continue the MLT program with appropriate changes in context, input and process.

Figure 1

Evaluation of MVCC Medical Lab Technician Program

A. Program Context
   1. Manpower Trends and Projections
   2. Programs in Adjoining Districts
   3. Program Scope, Objectives and Accreditation
   4. Staff Composition and Qualifications
   5. Student Characteristics

B. Program Input
   1. Cost Analysis
   2. Equipment and Supplies Inventory
   3. Facilities Inventory
   4. Affiliation Sites

C. Program Processes
   1. Course Scheduling by Term and Time of Day
   2. Instructional Modes
   3. Faculty Evaluation of Administrative Support
   4. Staff Roles and Relationships
   5. Student and Supervisor Evaluations of Faculty
   6. Student and Faculty Use and Evaluation of Support Services
   7. Support Services Self-Evaluation of Program Support
   8. Student and Faculty Evaluation of Facilities, Equipment and Supplies
   9. Student Evaluation of Clinical Sites
   10. Graduates' Evaluation of MLT Program

D. Program Products
   1. Student Grades by Courses
   2. Graduates' Performance on Certification Exam
   3. Graduates' Employment Status
   4. Employer Evaluation of Graduates

Implementation Problems

Problems involved in implementing the CIPP model included: delineating data to be collected, classifying data elements according to CIPP components and maximizing the impact of study results on decision-making.

Delineating data to be collected. Delineating data to be collected is one of the most complex tasks in almost every evaluation study. Stufflebeam and others (1971, pp 156-176) use a PERT work breakdown to depict four subsystems and the numerous process tasks involved in delineating data to be collected in any evaluation study. In addition, they give examples of potentially useful methods for accomplishing each task area.

Calendar, budget and staff limitations did not permit our application of all tasks outlined in the PERT work breakdown. However, five procedures were followed to delineate data to be collected in our MLT Program evaluation. First, we proceeded from a conceptual design for an institutional evaluation model which differentiated course, program and program area considerations. This model helped establish parameters within which to design our program evaluation. Second, we coordinated our local evaluation activities with those of the Illinois Board of Vocational Education and Rehabilitation and the Illinois Community College Board. Third, we decided to implement our institutional evaluation system on an incremental basis, starting with existing data and procedures and adding what was feasible within time, cost and staff constraints.

Fourth, we reviewed data elements included in reports of institutions using CIPP to evaluate developmental projects. Fifth, we conducted brainstorming and review sessions with the college President, Dean of Instruction, Associate Dean for Occupational Education and the Associate Dean for Health Sciences. Each of these procedures was helpful in delineating data to be collected in the initial application of the CIPP model.

Classifying data elements. Initial consideration of the CIPP components suggests that they are mutually exclusive. Therefore, data elements should be readily classifiable as context, input, process or product. A review of CIPP evaluation reports, however, reveals that the same data element may be classified under different components by different authors. For example, staff characteristics are considered context data by Krucek, Hardi and Moon (1974, pp 19-25), and input data by Jacobs (1970, pp 10-12 and 49-50). This problem may be further confused by citation of context, input or process data in interpretation of product data.

Resolution of this problem seems to lie in classifying data elements by component according to the way in which the data is used in the study rather than by the nature of the data.

Maximizing impact of results. Maximizing the impact of study results on institutional decision-making is an even more challenging task than that of delineating data to be collected. Stufflebeam and others (1971, pp 197-213) use a PERT work breakdown to delineate the many tasks involved in preparing and disseminating evaluation reports. Providing information which is timely, relevant and well-presented, increases the likelihood that it will influence decision-making. However, procedures for maximizing the impact of the study results must include, but go beyond, providing information.

Our MVCC experience indicates that the extent to which staff are involved in a study strongly influences the impact of results on their decisions. Hence, maximum staff involvement was sought in the MLT Program evaluation. Staff at a variety of institutional levels were involved in planning, designing, collecting and interpreting data. In addition, study recommendations were developed cooperatively in meetings with involved faculty, support staff and administrators. Hopefully, maximizing staff involvement will maximize the impact of study results on decision-making.

Conclusion

Although designed to sequentially evaluate new change projects in large school systems with large evaluation staffs, our case study indicates that the CIPP model is useful for evaluating an established program in a single institution. The advantages of using the CIPP model far outweigh the implementation problems, most of which are common to all evaluation studies and which may be alleviated with increased application of the model.

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*Recommended for persons responsible for evaluation studies.